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10/684,837	10/15/2003	Wook-Yeon Hwang	1293.1927	9855

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EXAMINER	
LAMB, CHRISTOPHER RAY	
ART UNIT	**PAPER NUMBER**
2627	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/684,837	HWANG ET AL.	
	Examiner	Art Unit	
	Christopher R. Lamb	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-59 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-59 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 15 October 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 12/18/06, 9/28/06.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements filed December 18th, 2006 and September 28th, 2006 fail to comply with 37 CFR 1.98(a)(3) because they does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Specifically, the Office Actions issued in Japanese Patent Application No. 2003-369402 have not been considered.

Claim Objections

2. Claim 30 objected to because of the following informalities: in line 3, "plus" should be "pulse." Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 32 is rejected under 35 U.S.C. 102(b) as being anticipated by Shoji et al. (US 6,157,609).

Regarding claim 32:

Shoji discloses:

A method of determining a write pattern by performing test recording on an optical recording medium, comprising:

setting write pattern elements and recording a test write pattern on the optical recording medium (column 18, line 66 to column 19, line 30);

reproducing the test write pattern to output a radio frequency signal (column 18, line 66 to column 19, line 30); and

determining a write pattern with optimum write pattern elements, based on adjusting the set write pattern elements using the radio frequency signal (column 18, line 66 to column 19, line 30),

wherein write pattern elements of the write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal (column 18, line 66 to column 19, line 30).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-10, 12-25, 27, 28, 32-38, and 47-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okubo et al. (US 2003/0081518 A1) in view of Osakabe (US 5,872,763), and further in view of Shoji et al. (US 6,157,609).

Regarding claim 1:

Okubo discloses:

A method of optimizing recording conditions of an optical recording medium (abstract), comprising:

setting standard power for test recording and recording a test write pattern in a plurality of tracks on the optical recording medium (abstract);

chcking a quality of a radio frequency signal reproduced from one of the plurality of tracks in which the write pattern is recorded and which is effected by writing in adjacent tracks to determine optimum power for optimized recording conditions (abstract).

Okubo does not disclose:

(A) that setting standard power includes setting write, erase, and bias powers;

(B) that determining optimum powers includes determining optimum write, erase, and bias powers; or

(C) wherein write pattern elements of the write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal.

Regarding (A) and (B):

Osakabe discloses setting standard powers including setting write, erase, and bias powers, and that determining optimum powers includes determining optimum write, erase, and bias powers (abstract).

Osakabe discloses that setting all these powers allows for optimum recording (column 2, lines 5-25).

Note that Osakabe discloses a specific method for setting the powers, involving fixing two of the powers and varying the other one to determine optimum powers (Fig. 9-10). This is not relied upon to reject this claim but should be considered part of the combination of Okubo in view of Osakabe: this will be further discussed in the rejection of later claims.

It would have been obvious to one of ordinary skill in the art to set standard powers including write, erase, and bias powers, and to determine optimum powers including write, erase, and bias powers, as taught by Osakabe.

The motivation would have been to achieve optimum recording conditions.

Regarding (C):

Shoji discloses wherein write pattern elements of the write pattern are optimized using an asymmetry value of the radio frequency signal (column 19, lines 19-30). Shoji discloses that this achieves optimized recording (column 2, lines 49-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Okubo in view of Osakabe wherein write pattern elements of the write pattern are optimized using an asymmetry value of the radio frequency signal.

The motivation would have been to further optimize recording, as taught by Shoji.

Regarding claim 2:

In Okubo in view of Osakabe, and further in view of Shoji, the test write pattern comprises a combination of marks of two or more different lengths and a space (Okubo: paragraphs 41, 43).

Regarding claim 3:

In Okubo in view of Osakabe, and further in view of Shoji, the test write pattern comprises a first mark of length T, and a second mark of length NT which is longer than the first mark and in which power is saturated due to the formation of the marks, and a space, and wherein T is a cycle of a recording and/or reproducing clock and N is an integer (Okubo: paragraphs 41, 43).

Regarding claims 4-5:

Okubo in view of Osakabe, and further in view of Shoji, discloses (as per claim 4) a test write pattern comprising a combination of marks of two or more different lengths and a space (Okubo: paragraph 40); and

discloses (as per claim 5) a test write pattern comprising a mark of length 2T and a mark of length 5T, and a space (this is within the range disclosed by Okubo: paragraph 40).

Okubo in view of Osakabe, and further in view of Shoji, does not disclose to do this "when the optical recording medium uses a run-length-limited (RLL) (1,7) code."

The Examiner takes Official Notice that RLL (1,7) codes are well known in the art. (RLL codes are used in both CDs and DVDs, which Okubo discloses as being mediums the invention is used with).

It would have been obvious to one of ordinary skill in the art to use a test write pattern comprising a mark of length 2T and a mark of length 5T and a space (and thus one of two or more different lengths and a space) when using a RLL (1,7) code because a mark of length 2T and a mark of length 5T and a space are within the range disclosed by Okubo and a RLL (1,7) code is well known in the art.

The motivation would have been to use the RLL code appropriate for the media type being used.

Regarding claims 6:

Okubo in view of Osakabe, and further in view of Shoji, discloses a test write pattern comprising a combination of marks of two or more different lengths and a space (Okubo: paragraph 40); and

Okubo in view of Osakabe, and further in view of Shoji, does not disclose to do this "when the optical recording medium uses a run-length-limited (RLL) (2,6) code."

The Examiner takes Official Notice that RLL (2,6) codes are well known in the art. (RLL codes are used in both CDs and DVDs, which Okubo discloses as being mediums the invention is used with).

It would have been obvious to one of ordinary skill in the art to use a test write pattern comprising a combination of marks of two or more different lengths and a space because this combination is within the range disclosed by Okubo and a RLL (2,6) code is well known in the art.

The motivation would have been to use the RLL code appropriate for the media type being used.

Regarding claim 7:

Okubo in view of Osakabe, and further in view of Shoji, discloses a test write pattern comprising a mark of length 3T and a mark of length 6T, and a space (Okubo: paragraph 40); and

Okubo in view of Osakabe, and further in view of Shoji, does not disclose to do this "when the optical recording medium uses a run-length-limited (RLL) (2,10) code."

The Examiner takes Official Notice that RLL (2,10) codes are well known in the art. (RLL codes are used in both CDs and DVDs, which Okubo discloses as being mediums the invention is used with).

It would have been obvious to one of ordinary skill in the art to use a test write pattern claimed because this combination is within the range disclosed by Okubo and a RLL (2,10) code is well known in the art.

The motivation would have been to use the RLL code appropriate for the media type being used.

Regarding claim 8:

In the method of Okubo in view of Osakabe, and further in view of Shoji, the optimum powers, including the optimum write, erase, and bias powers, are checked using the magnitude of the radio frequency signal (Okubo paragraph 40 discloses using the magnitude to check the power: with the teaching of Osakabe this is extended to the write, erase, and bias powers).

Regarding claim 9:

In the method of Okubo in view of Osakabe, and further in view of Shoji, the standard powers, including the write, erase and bias powers, are adjusted respectively until the optimum powers are obtained (this is according to the teaching of Osakabe, as in Oskabe Fig. 9 and 10), using the magnitude of the radio frequency signal (as per Okubo paragraph 40).

Regarding claim 10:

In Okubo in view of Osakabe, and further in view of Shoji, the checking further comprises optimizing write pattern elements of the write pattern using the asymmetry value of the radio frequency signal (this was the contribution of Shoji, as discussed in claim 1).

Regarding claim 12-14:

All elements positively recited have already been discussed with regards to earlier claims. No further elaboration is necessary.

Regarding claims 15-18:

These claims are similar to claims 4-7 and are similarly rejected.

Regarding claim 19:

In Okubo in view of Osakabe, and further in view of Shoji, the magnitude of the radio frequency signal is determined to be a peak-to-peak value of a radio frequency signal (Okubo paragraph 40: that it is the peak-to-eak value is inherent to Okubo's determination of the maximum) for a mark of length T of the test write pattern in which a power is saturated due to the formation of marks (Okubo: paragraphs 41, 43).

Regarding claim 20:

In Okubo in view of Osakabe, and further in view of Shoji, the determining comprises:

reproducing the test write pattern recording in a middle track of the plurality of tracks effected by writing on adjacent tracks to output a radio frequency signal (Okubo: abstract); and

fixing two of the standard write, bias, and erase powers and varying the other one of the standard write, bias, and erase powers within a range to determine the optimum write, bias, and erase powers when the magnitude of the radio frequency signal is at a maximum (this is the method taught by Osakabe, as in Osakabe Fig. 9 and 10).

Regarding claim 21:

In the method of Okubo in view of Osakabe, and further in view of Shoji, each of the standard powers, including write, erase and bias powers, is adjusted for test recording (Osakabe teaches adjusting each of the powers) until the magnitude of the radio frequency signal is at a maximum (this is the Okubo's method for finding the optimum power) so as to determine the optimum powers, including optimum write, erase, and bias powers (as discussed previously).

Regarding claim 22:

In the method of Okubo in view of Osakabe, and further in view of Shoji, the determining comprises:

reproducing, by a radio frequency signal, the write pattern recorded in a middle track of the plurality of tracks effected by writing on adjacent tracks (Okubo: abstract);

detecting an envelope of the radio frequency signal to detect a maximum amplitude of the radio frequency signal (Okubo: paragraph 40, where detecting the envelope is inherent to detecting the maximum);

fixing the standard write and bias powers and varying the standard erase power within a range (taught by Osakabe) to determine whether the magnitude of the radio

frequency signal is the maximum amplitude value (part of Okubo's method: paragraph 40),

wherein, when the magnitude of the radio frequency is not the maximum amplitude, repeating the reproducing, detecting, and fixing (the process is repeated for multiple power levels: Okubo paragraphs 39-40; it is unclear what part of the specification this particular step refers to, but Okubo appears to perform the overall process in the same manner as the Applicant), and

wherein, when the magnitude of the radio frequency is the maximum amplitude value (Okubo paragraphs 39-40), determining the erase power is an optimum erase power (setting erase power is taught by Osakabe).

Regarding claim 23:

This is similar to claim 22 except it is with regards to the write power; Osakabe teaches setting all three powers similarly.

Regarding claim 24:

This is similar to claim 22 except it is with regards to the bias power; Osakabe teaches setting all three powers similarly.

Regarding claim 25 and 27:

All elements positively recited have already been discussed with regards to earlier rejections. No further elaboration is necessary.

Regarding claims 28:

In Okubo in view of Osakabe, and further in view of Shoji, wherein, when the asymmetry value of the radio frequency signal is at a minimum, a write pattern element

indicating a shift amount of a starting edge of a first pulse is determined (column 18, line 65 to column 19, line 30).

Regarding claim 32:

Okubo in view of Osakabe, and further in view of Shoji, discloses a method of determining a write pattern by performing test recording on an optical recording medium, comprising:

setting write pattern elements (Shoji: column 18, line 66 to column 19, line 30) and recording a test write pattern on the optical recording medium (Okubo: abstract);

reproducing the test write pattern to output a radio frequency signal (Okubo: abstract, or Shoji: column 18, line 66 to column 19, line 30); and

determining a write pattern with optimum write pattern elements, based upon adjusting the set write pattern elements using the radio frequency signal (Shoji: column 18, line 66 to column 19, line 30),

wherein write pattern elements of the write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal (Shoji: column 18, line 66 to column 19, line 30).

Regarding claims 33-38:

All elements positively recited have been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 47:

Okubo in view of Osakabe, and further in view of Shoji, discloses an optical recording and/or reproducing apparatus comprising:

a pickup and a radio frequency signal detector arranged to record a test write pattern in one or more tracks on an optical recording medium, and reproduce the test write pattern recorded in one of the tracks effected by writing in adjacent tracks (Okubo Fig. 1: 102);

a first detector arranged to detect a radio frequency signal obtained from reproducing the test write pattern (Okubo paragraph 41); and

a system controller arranged to set standard powers, including write, erase and bias powers for test recording before the test write pattern is recorded in one or more tracks on the optical recording medium, and to determine optimum powers, including optimum write, erase, and bias powers, using the radio frequency signal (Okubo paragraphs 40-41 discloses a system controller to set and determine optimum power; Osakabe contributed setting write, erase, and bias powers as previously discussed),

wherein write pattern elements of the write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal (taught by Shoji as previously discussed).

Regarding claims 48-54:

All elements positively recited have already been identified with regards to earlier claims. No further elaboration is necessary.

7. Claims 11, 29-31, 42-44, 55, 56, 58, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okubo in view of Osakabe, and further in view of Shoji, as applied to the claims above, and further in view of Furumiya et al. (US 6,791,926).

Regarding claim 11:

Okubo in view of Osakabe, and further in view of Shoji, discloses a method of optimizing recording conditions as discussed above.

Okubo in view of Osakabe, and further in view of Shoji, does not disclose optimizing write pattern elements of the write pattern using the jitter value of the radio frequency signal.

Furumiya discloses optimizing write pattern elements of the write pattern using the jitter value of the radio frequency signal (column 2, line 55 to column 3, line 6). Furiyama discloses that this reduces the effect of variation (column 2, lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Okubo in view of Osakabe, and further in view of Shoji, optimizing write pattern elements of the write pattern using the jitter value of the radio frequency signal, as taught by Furumiya.

The motivation would have been to reduce the effect of variation, as taught by Furumiya.

Regarding claim 29:

This is similar to claim 11 and similarly rejected.

Regarding claim 30:

In Okubo in view of Osakabe, and further in view of Shoji, and further in view of Furumiya, when the jitter value of the radio frequency signal is at a minimum, a write pattern element indicating a width of the first pulse is determined (this is part of the teaching of Furumiya: see, for example, Fig. 3, for pattern elements to be adjusted; that

the element with the minimum jitter is picked is repeated throughout Furumiya: for example, column 11, lines 45-60).

Regarding claim 31:

In Okubo in view of Osakabe, and further in view of Shoji, and further in view of Furumiya, when the jitter value of the radio frequency signal is at a minimum, a write pattern element indicating a width of multi-pulses is determined (this is similar to claim 30: Furumiya Fig. 3 shows that the width of multi-pulses is a parameter that can be adjusted).

Regarding claims 42-44, 55, 56, 58, and 59:

All elements of these claims have been identified with regards to earlier claims. No further elaboration is necessary.

8. Claims 26, and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okubo in view of Osakabe, and further in view of Shoji, as applied to the claims above, and further in view of Tsukamoto (US 7,012,870).

Regarding claim 26:

Okubo in view of Osakabe, and further in view of Shoji, discloses a method of setting optimum powers as discussed above.

Okubo in view of Osakabe, and further in view of Shoji, does not disclose wherein, when the magnitude of the radio frequency signal is a maximum amplitude, a write pattern element indicating a period of time for which a cooling pulse lasts is determined.

Tsukamoto discloses determining a write pattern element indicating a period of time for which a cooling pulse lasts (column 16, lines 15-21).

It would have been obvious to one of ordinary skill in the art to modify Okubo to include determining a write pattern element indicating a period of time for which a cooling pulse lasts, as taught by Tsukamoto. It would also have been obvious to do so by selecting the period of time corresponding to when the magnitude of the radio frequency signal is a maximum amplitude (because this is already the method Okubo uses to evaluate test pattern quality: paragraph 40).

The motivation would have been to have better reflective properties (taught by Tsukamoto: column 16, lines 15-21).

Regarding claims 39-41:

All elements of this claim have already been addressed with regards to earlier claims.

9. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okubo in view of Shoji, and further in view of Furumiya, and further in view of Tsukamoto.

Note that this rejection has been repeated from the previous Office Action, although the wording of the explanation of the rejection has changed (the previous rejection cited earlier rejections in that Application which are no longer applicable, since those earlier claims have been amended and are now rejected differently).

Regarding these claims:

The modification of Okubo in view of Shoji was discussed above in the rejection of claim 1.

The modification of Okubo in view of Furumiya was discussed above in the rejection of claim 11.

The modification of Okubo in view of Tsukamoto was discussed above in the rejection of claim 26.

The teachings and motivations cited in these previous rejections are independently obvious: thus the combination of Okubo in view of Shoji, and further in view of Furumiya, and further in view of Tsukamoto would be equally as obvious to one of ordinary skill in the art as the previous rejections, for the individual motivations cited above.

Regarding claim 45:

Okubo in view of Shoji, and further in view of Furumiya, and further in view of Tsukamoto discloses a method of determining a write pattern by performing test recording on an optical recording medium, comprising:

fixing a first write pattern element indicating a width of a first pulse (taught by Furumiya as discussed above) and a second write pattern indicating a width of multi-pulses (taught by Furumiya as discussed above), setting a third write pattern element indicating a shift amount of a starting edge of the first pulse (taught by Shoji as discussed above), and setting a fourth write pattern element indicating a period of time for which a cooling pulse lasts (taught by Tsukamoto);

reproducing the test write pattern to output a radio frequency signal (taught in every reference);

detecting an asymmetry of the radio frequency signal (taught by Shoji);

detecting an envelope of the radio frequency signal (in Okubo as previously discussed);

determining the third write pattern element using the asymmetry of the radio frequency signal (taught by Shoji as discussed above) and determining the fourth write pattern element using the envelope of the radio frequency signal (the teaching of Tsukamoto applied to Okubo as discussed above).

Regarding claim 46:

The method of Okubo in view of Osakabe, and further in view of Shoji, and further in view of Furumiya, and further in view of Tsukamoto further comprises:

detecting a jitter of the radio frequency signal (taught by Furumiya as discussed above);

fixing the third and fourth write pattern elements, re-setting the first and second write pattern elements, and recording the test write pattern (all of Osakabe, Shoji, Furumiya, and Tsukamoto teach setting and re-setting individual elements during the testing process); and

determining the first and second write pattern elements using the jitter of the radio frequency signal (taught by Furumiya as discussed above).

10. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okubo in view of Osakabe, and further in view of Shoji, and further in view of Furumiya, and further in view of Tsukamoto.

Okubo in view of Osakabe, and further in view of Shoji, and further in view of Furumiya is discussed above in the rejection of, for example, claim 56.

The teaching of Tsukamoto and motivation to combine them is discussed above in the rejection of claim 26.

It would have been obvious to include this teaching in Okubo in view of Osakabe, and further in view of Shoji, and further in view of Furumiya, for the reasons previously discussed.

In that case:

In Okubo in view of Osakabe, and further in view of Shoji, and further in view of Furumiya the system controller determines an optimized write pattern element indicating a period of time for which a cooling pulse lasts using the magnitude of the radio frequency signal for the test write pattern (as discussed in the rejection of claim 26).

Response to Arguments

11. This section is in response to Applicant's arguments filed October 25th, 2006.

12. Applicant's arguments with respect to the objection to the drawings and the rejection of claims 1-60 under 35 USC 112 have been fully considered and are persuasive. The objection to the drawings and the 35 USC 112 rejection of the claims has been withdrawn.

13. Applicant's arguments with respect to claims 1-44 and 47-59 have been considered but are moot in view of the new ground(s) of rejection.

14. Applicant's arguments with respect to claims 45 and 46 have been fully considered but they are not persuasive.

Applicant argued (pages 18-19) that none of Okubo, Tsukamoto, Shoji, or Furumiya discloses the "specific step" of Applicant's claim. However, each element of the claim has been identified in the rejection above. Essentially, all Applicant is claiming is using various parameters of the read test signal to customize various pattern elements of the write pattern. Each of these parameters is taught by one of the references: Shoji teaches using the asymmetry to set the shift amount of the starting edge; Furumiya discloses using the jitter to set the width of a first pulse and multi-pulses; Tsukamoto teaches setting the length of the cooling pulse; Okubo teaches using the envelope of the radio frequency signal as a quality measure.

15. Also, note that in response to the Applicant's request for an interview before a further action was issued in this application, a telephone call was made on January 16th, 2007 to Hung Bui, the attorney of record: Mr. Bui indicated that an interview was not necessary at this time.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (572) 272-5264. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 1/17/07

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